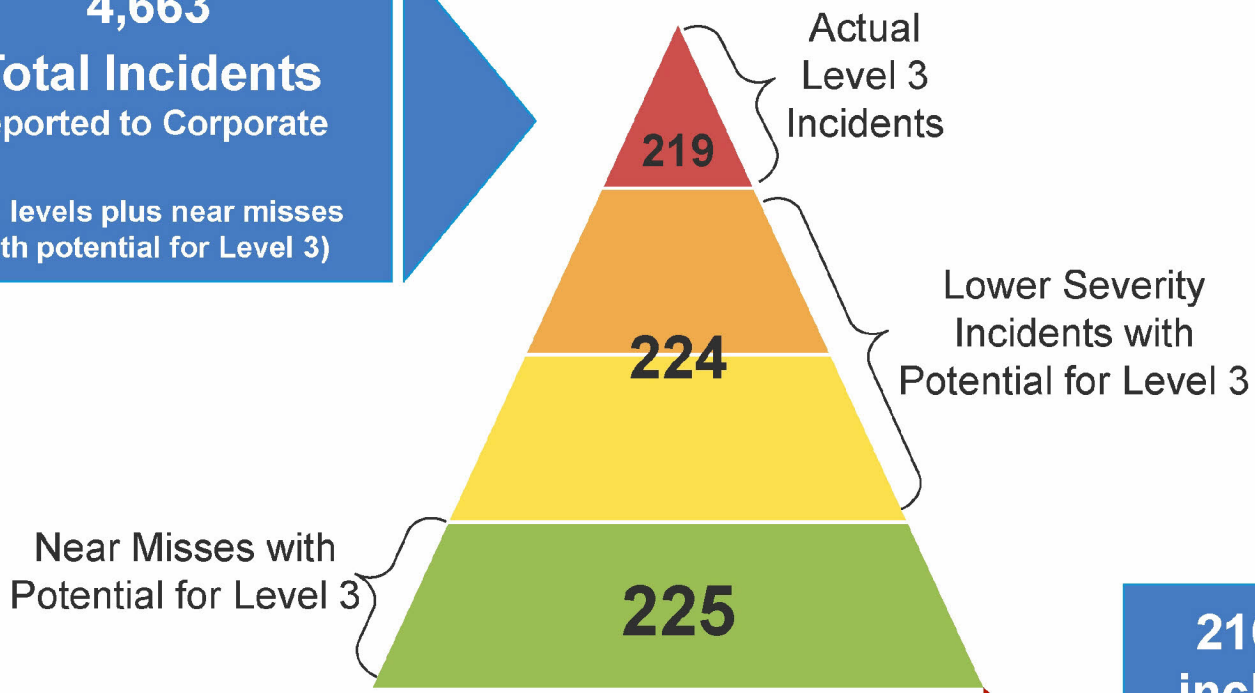
Safety Topic of the Month
2010 Major Incident Study

July 2011

Overview
Study Frame

4,663
Total Incidents
reported to Corporate

(All levels plus near misses with potential for Level 3)

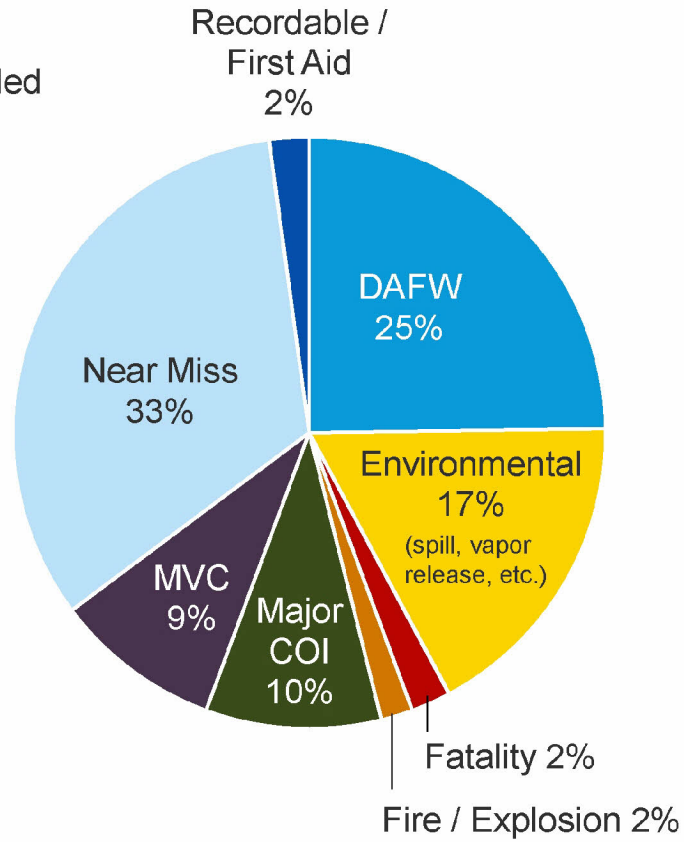


216 Incidents included in the MIS
- 140 incidents
- 76 near misses

Overview
Consequences

Consequences Cited in Incident and MVC Incident Reports

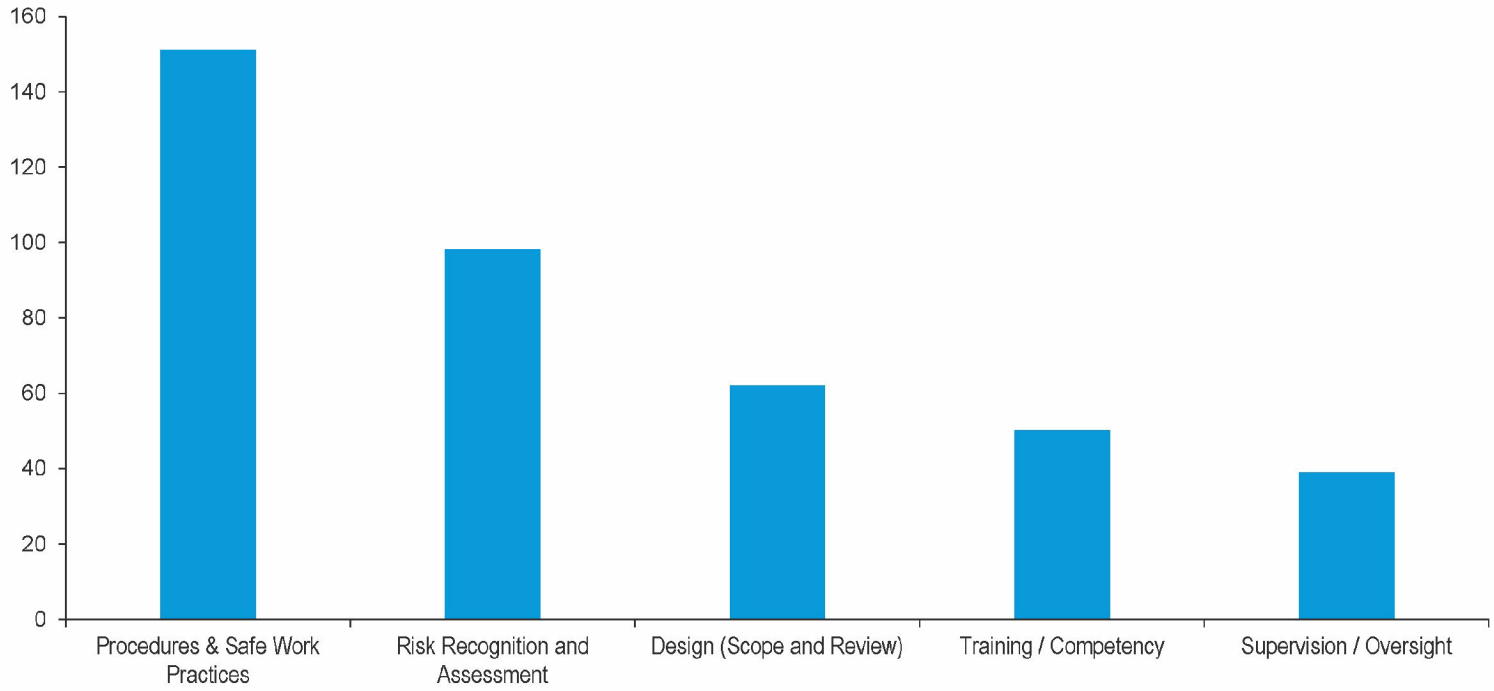
76 Near Miss events were included compared to 37 in 2009



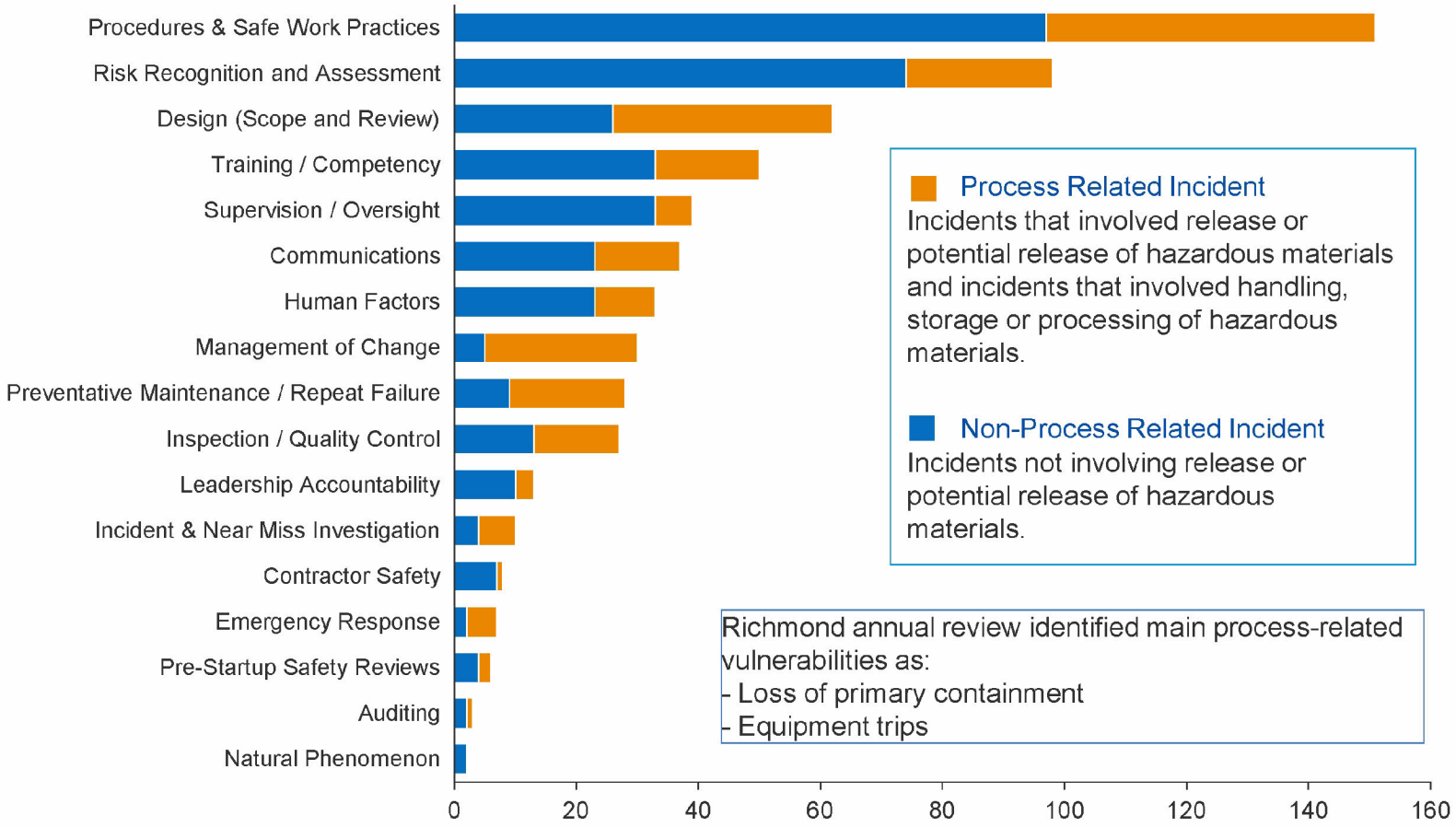
Note: A single incident may have multiple consequences. In this study, 11 of 140 incidents had multiple consequences.

Overview
Leading Root Cause Categories

Top 5 Root Cause Occurrences

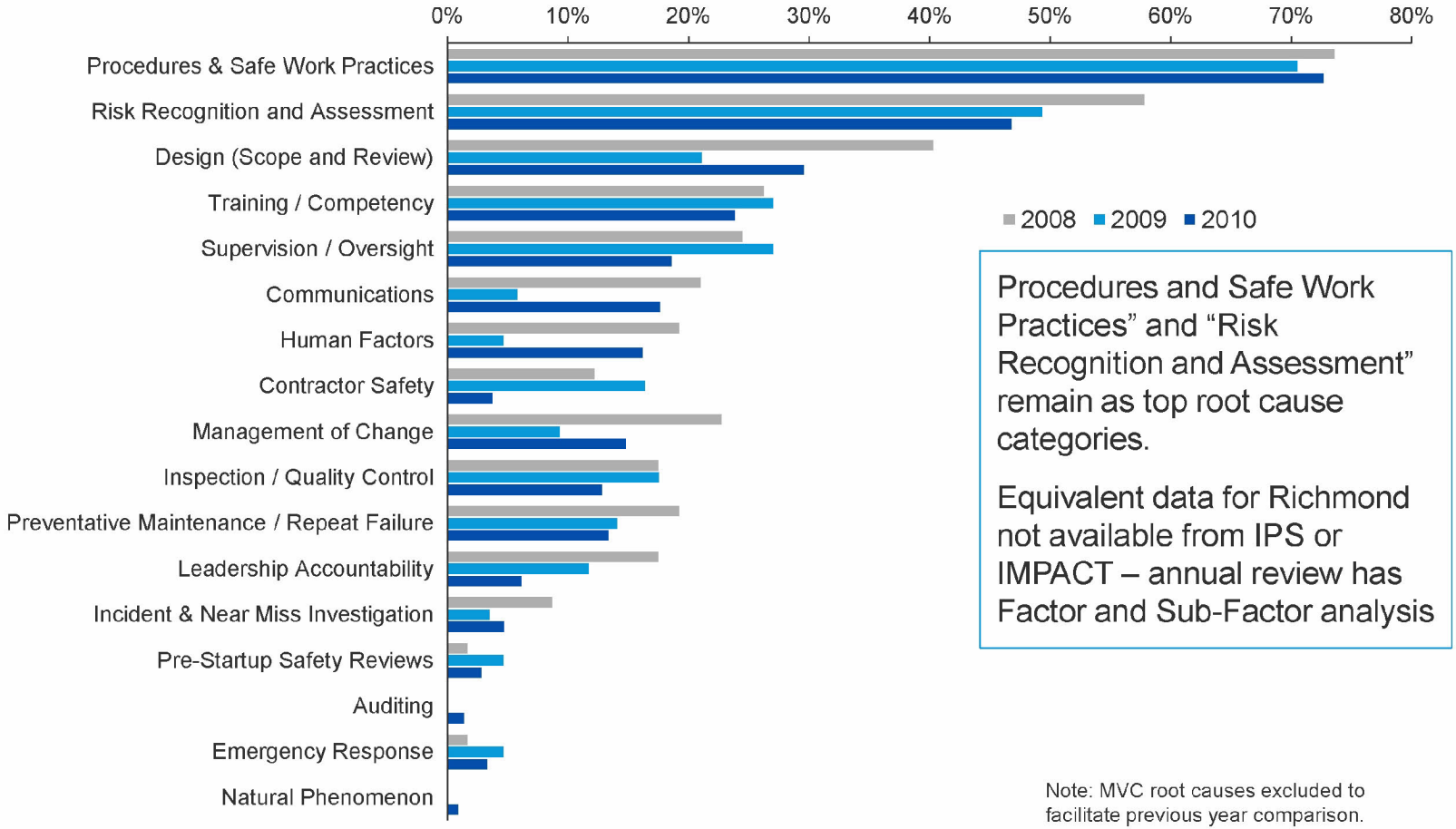


Overview
Root Causes: Process vs. Non-Process Related



Overview
Comparison to Previous Major Incident Studies

Root Cause Comparison by Year (%)



Procedures and Safe Work Practices" and "Risk Recognition and Assessment" remain as top root cause categories.

Equivalent data for Richmond not available from IPS or IMPACT – annual review has Factor and Sub-Factor analysis

Note: MVC root causes excluded to facilitate previous year comparison.

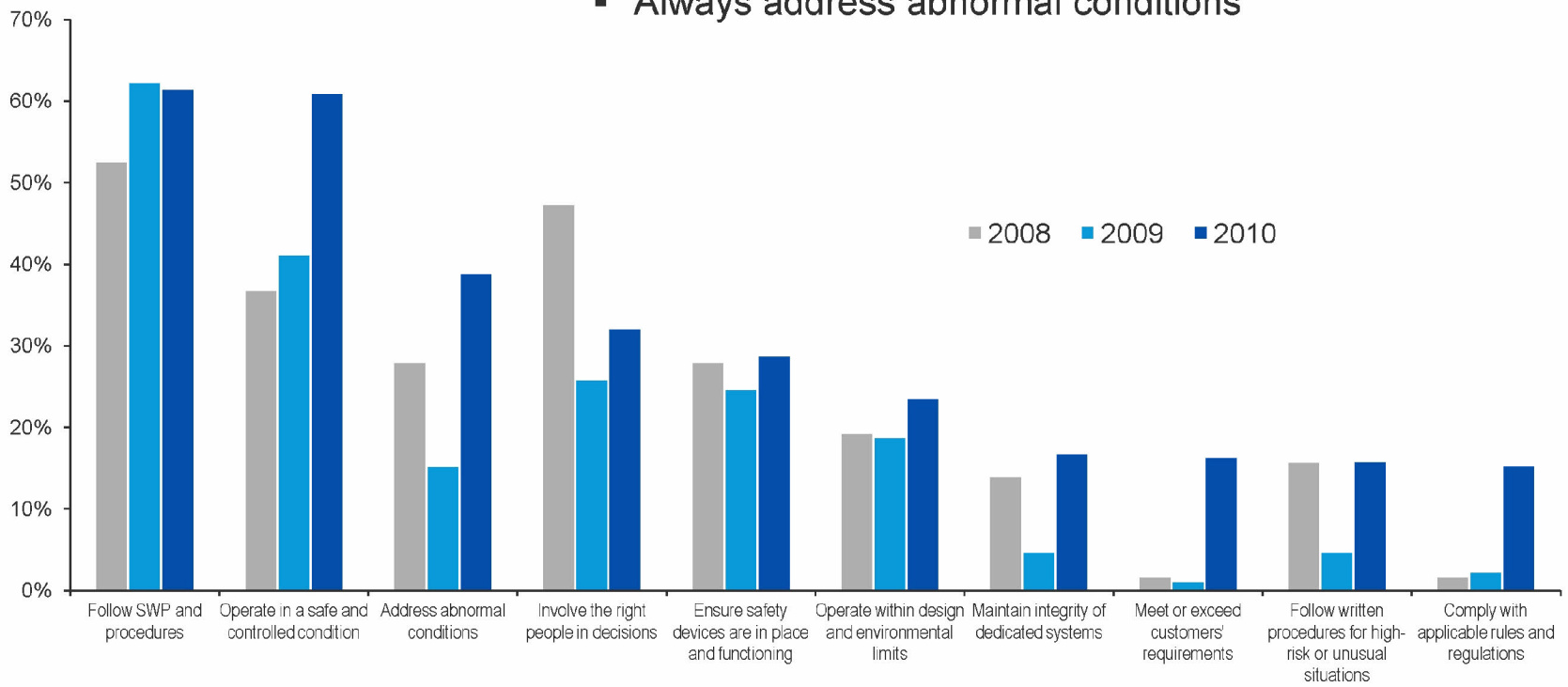
Overview
Tenets of Operation Cited as Violated

Tenets Cited as Violated

Percent of Incidents

Richmond 2010 LI/NLI data identified same top 3 tenets:

- Always follow safe work practices and procedures
- Always operate in a safe and controlled condition
- Always address abnormal conditions



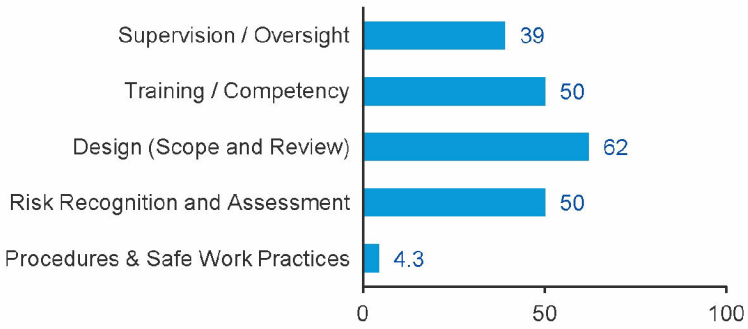
Overall Results
Work Group Discussion Topics

Choose ONE of the following discussion topics that applies to your work group

Discussion Topic
Procedures & Safe Work Practices

Key Findings

- Identified as leading root cause among incidents evaluated:
  - 89% (29 of 36) of environmental incidents
  - 71% (47 of 66) of injuries
  - 50% (17 of 34) of reliability incidents
- Procedures commonly cited as incomplete, inaccurate or unavailable, and include:
  - Operating procedures
  - Maintenance & Inspection procedures
  - Informal work methods (e.g., standard practices, job aids, etc.)



Note

- Operational Discipline aims to improve how we perform key Safe Work Practices (SWP), but it applies to any work we do

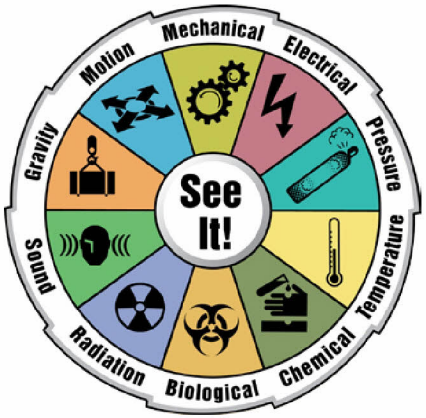
Questions

- How does your group identify high-risk activities & determine whether procedures are accurate?
- Are Managers & Supervisors personally involved in high-risk activities? Do they verify and validate use of procedures and SWP
- What value do you see in using procedures to address risks?

Discussion Topic
Risk Recognition and Assessment

Key Findings

- 48% of injury reports reviewed (32 of 66) identified a gap in supervision, coaching or communication, particularly relative to risks associated with the work
- For incidents that resulted in reliability or environmental consequences, the risk of not following procedures did not appear to be consistently understood



Note

- Refinery is working to reinforce the use of individual risk awareness and recognition tools (e.g. LPSA)

Questions

- What are the barriers to doing effective job safety assessments and job hazard analyses (JSA/JHAs)?
- How can managers and supervisors do a better job of auditing the JSA/JHA process to see how well it works?
- How do you include possible scenarios for the need to use Stop or Pause Work Authority while planning how to perform a task?

Discussion Topic
Design Scope and Review

Key Findings

- Identified as one of the top 3 most frequently cited causes for incidents resulting in personal injury, environmental consequences and equipment failure
- Incidents falling into the "Design" root cause category were not primarily issues associated with the quality of design or design specifications. Most frequently cited design shortcomings were:
  - Original design did not anticipate full range of conditions
  - Changes were made without considering the entire scope of impact or consequences
- Inadequate review cited most often as reason for Design issues
  - Inadequate review particularly pertains to involving the right expertise for identification of risk and for human factors

Questions

- Are knowledgeable and qualified personnel used to perform reviews (design, risk, etc.) on new projects and system modifications?
- When performing a design review, how do you evaluate human factors in situations such as "line of fire", equipment access, etc.?
- If operating or design conditions change, how should we assess the risk and manage the change?
- How can we clearly document and communicate the design basis (PSI) and assure accessibility to this PSI 100% of the time? Is this important or not?
- Who is responsible in your group for providing feedback to appropriate Chevron standards group when design specifications are identified as a root cause for an LI or NLI?

Discussion Topic
Oversight & Competency

Key Findings

- Frequently identified as a primary safeguard for helping to ensure that:
  - Workers are knowledgeable
  - Risks are identified
  - Procedures are followed
- Identified Supervision / Oversight or Training / Competency as a root cause in 53% of routine activities

Questions

- Do Supervisors / Head Operators / Head Mechanics participate in appropriate pre-job safety meetings and JSA/JHAs?
- What suggestions do you have to ensure there is appropriate oversight for high-risk activities?
- How do Managers / Supervisors / Head Operators / Head Mechanics reinforce use of Stop-Work Authority (SWA)?
- When was the last time you discussed when personnel might need to use SWA while planning how to perform a task?